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Substitute for form 1449A/B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/801,648-Conf. #2232	
			Filing Date	March 17, 2004	
			First Named Inventor	Hsiang-Fu Kung	
			Art Unit	N/A 1633	
			Examiner Name	Not Yet Assigned Robert M. Kelly	
Sheet	1	of	3	Attorney Docket Number	V9661.0074

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
TUK	AA**	US-5,436,146.	07-25-1995	THOMAS E. SHENK	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number-Kind Code <sup>5</sup> (if known)			
TUK	BA		WO 94/12649	06-09-1994	Richard J. Gregory et al.	

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NON PATENT LITERATURE DOCUMENTS			
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TUK	CA	MONAHAN ET AL., "Adeno-associated virus vectors for gene therapy: more pros than cons?", 2000, Mol. Med. Today 6:433-440.	
	CB	FLOTTE AND CARTER, "Adeno-associated virus vector for gene therapy," 1995, Gene Ther. 2:357-362.	
	CC	RABINOWITZ ET AL., "Adeno-associated virus expression systems for gene transfer," 1998, Curr. Opin. Biotechnol., 9:470-475.	
	CD	MUZYCZKA, "Current Topics in Microbiology and Immunology," 1992, Curr. Top. Microbiol. Immunol., 158:97-129.	
	CE	SAMULSKI ET AL., "Helper-Free Stocks of Recombinant Adeno-Associated Viruses: Normal Integration Does Not Require Viral Gene Expression," 1989, Virol. 63:3822-3828.	
	CF	XIAO ET AL., "Efficient Long-Term Gene Transfer into Muscle Tissue of Immunocompetent Mice by Adeno-Associated Virus Vector," 1996, J. Virol. 70:8098-8108.	
	CG	WOZNEY AND ROSEN, "Bone Morphogenetic Protein and Bone Morphogenetic Protein Gene Family in Bone Formation and Repair," 1998, Clin. Orthop. 346:26-37.	
	CH	SAKOU, "Bone Morphogenetic Proteins: From Basic Studies to Clinical Approaches," 1998, Bone 22:591-603.	
	CI	CHEN, "Orthopedic applications of gene therapy," 2001, J. Orthop. Sci. 6:199-207.	
	CJ	SANDHU ET AL., "Effect of Interleukin-6 Secreted by Engineered Human Stromal Cells on Osteoclasts in Human Bone," 1999, Bone 24:217-227.	
	CK	FANG ET AL., "Stimulation of new bone formation by direct transfer of osteogenic plasmid genes," 1996, Proc. Natl. Acad. Sci. 93:5753-5758.	
	CL	BONADIO ET AL., "Localized, direct plasmid gene delivery in vivo: prolonged therapy results in reproducible tissue regeneration," 1999, Nat. Med. 5:753-759.	
V	CM	ALDEN ET AL., "In Vivo Endochondral Bone Formation Using a Bone Morphogenetic Protein 2 Adenoviral Vector," 1999, Hum. Gene. Ther. 10:2245-2253.	
TUK	CN	LIEBERMAN ET AL., "The Effect of Regional Gene Therapy with Bone Morphogenetic	

*Robert M. Kelly 2/2/06*

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			Art Unit	N/A 1633	
			Examiner Name	Not Yet Assigned Robert M. Kelly	
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<i>RHK</i>		Protein-2-Producing Bone-Marrow Cells on the Repair of Segmental Femoral Defects in Rats," 1999, J. Bone. Joint. Surg. 81A:905-917. <i>(continued from previous page)</i>	
<i>1</i>	CO	CHEN ET AL., "In vivo new bone formation by direct transfer of adenoviral-mediated bone morphogenetic protein-4 gene," 2002, Biochem. Biophys. Res. Commun. 98:121-127.	
	CP	BREITBART ET AL., "Gene-Enhanced Tissue Engineering: Applications for Bone Healing Using Cultured Periosteal Cells Transduced Retrovirally with the BMP-7 Gene," 1999, Ann. Plast. Surg. 42:488-495.	
	CQ	PENG ET AL., "Development of an MFG-Based Retroviral Vector System for Secretion of High Levels of Functionally Active Human BMP4," 2001, Mol. Ther. 4:95-104.	
	CR	PONNAZHAGAN S ET AL., "Adeno-associated Virus for Cancer Gene Therapy," 2001, Cancer Res. 61:6313-6321.	
	CS	LAI CC ET AL., 2001, "Suppression of Choroidal Neovascularization by Adeno-associated Virus Vector Expressing Angiostatin," Invest. Ophthalmol. Vis. Sci. 42(10):2401-7.	
	CT	NGUYEN JT ET AL., "Adeno-associated Virus-mediated Delivery of Antiangiogenic Factor as an Antitumor Strategy," 1998, Cancer Research 58:5673-7.	
	CU	RENGACHARY ET AL., "Bone healing and spinal fusion," 2002, Neurosurg Focus 13 (6):1-6.	
	CV	KOZARSKY AND WILSON, "Gene therapy: adenovirus vectors," 1993, Current Opinion in Genetics and Development 3:499-503 present a review of adenovirus-based gene therapy.	
	CW	BOUT ET AL., "Lung Gene Therapy: In Vivo Adenovirus-Mediated Gene Transfer to Rhesus Monkey Airway Epithelium," 1994, Human Gene Therapy 5:3-10.	
	CX	ROSENFELD ET AL., "Adenovirus-Mediated Transfer of a Recombinant a1-Antitrypsin Gene to the Lung Epithelium in Vivo," 1991, Science 252:431-434.	
	CY	ROSENFELD ET AL., "In Vivo Transfer of the Human Cystic Fibrosis Transmembrane Conductance Regulator Gene to the Airway Epithelium," 1992, Cell 68:143-155.	
	CZ	MASTRANGELI ET AL., "Diversity of Airway Epithelial Cell Targets for In Vivo Recombinant Adenovirus-mediated Gene Transfer," 1993, J. Clin. Invest. 91:225-234.	
	CA1	WANG, ET AL., "A packaging cell line for propagation of recombinant adenovirus vectors containing two lethal gene-region deletions," 1995, Gene Therapy 2:775-783.	
	CB1	WALSH ET AL., "Gene Therapy for Human Hemoglobinopathies," 1993, Proc. Soc. Exp. Biol. Med. 204:289-300.	
<i>DUP</i>	<i>661</i>	<i>XU, RA ET AL., 2001, "Paracell transduction of diffuse cells and hepatocyte insulin leading to euglycemia in diabetic rats, Mol Ther 3:S180."</i>	
	CD1	DURING MJ ET AL., "Paroral gene therapy of lactose intolerance using an adeno-associated virus vector," 1998, Nature Med. 4:1131- 1135.	
	CE1	DURING MJ ET AL., "An oral vaccine against NMDAR1 with efficacy in experimental stroke and epilepsy, 2000, Science 287:1453-1460.	
	CF1	GRIMM ET AL., "Novel Tools for Production and Purification of Recombinant Adenoassociated Virus Vectors," 1998, Hum Gene Ther 9:2745-2760.	
	CG1	KLEIN ET AL., "High-velocity Microprojectiles for Delivering Nucleic Acids Into Living Cells," 1992, Biotechnology 24:384-386.	
	CH1	GOOMER ET AL., "High-efficiency non-viral transfection of primary chondrocytes and perichondrial cells for ex-vivo gene therapy to repair articular cartilage defects," 2001, Osteoarthritis Cartilage 9:249-256	
	CI1	BONADIO ET AL., "Localized, direct plasmid gene delivery in vivo: prolonged therapy results in reproducible tissue regeneration," 1999, Nat Med 5:753-759.	
	CJ1	EVANS ET AL., "Clinical Trial to Assess the Safety, Feasibility, and Efficacy of Transferring a Potentially Anti-Arthritic Cytokine Gene to Human Joints with Rheumatoid Arthritis," 1996, Hum Gene Ther 7:1261-1280.	
<i>V</i>	CK1	ENGSTRAND ET AL., "Transient Production of Bone Morphogenetic Protein 2 by Allogeneic Transplanted Transduced Cells Induces Bone Formation," 2000, Hum Gene Ther 11:205-211.	
<i>EDMK</i>	CL1	BREITBART ET AL., "Gene-Enhanced Tissue Engineering: Applications for Bone Healing	

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CMK		Using Cultured Periosteal Cells Transduced Retrovirally with the BMP-7 Gene," 1999, Ann Plast Surg 42:488-495. (Continued from previous page)	
DUP →	CM1	ALDEN ET AL., "In Vivo Endochondral Bone Formation Using a Bone Morphogenetic Protein 2 Adenoviral Vector," 1999, Hum Gene Ther 10:2245-2253.	
	CN1	VARADY ET AL., "Morphologic Analysis of BMP-9 Gene Therapy-Induced Osteogenesis," 2001, Hum Gene Ther 12:697-710.	
	CO1	LIEBERMAN ET AL., "The Effect of Regional Gene Therapy with Bone Morphogenetic Protein-2-Producing Bone-Marrow Cells on the Repair of Segmental Femoral Defects in Rats," 1999, J Bone Joint Surg 81A:905-917.	
	CP1	FRANCESCHI ET AL., "Gene Therapy for Bone Formation: In Vitro and In Vivo Osteogenic Activity of an Adenovirus Expressing BMP7," 2000, J Cell Chem 78:476-486.	
	CQ1	JIANG ET AL., "Local High-Capacity Adenovirus-Mediated mCTLA4lg and mCD40lg Expression Prolongs Recombinant Gene Expression in Skeletal Muscle," 2001, Mol Ther 3:892-900.	
	CR1	KATAGIRI ET AL., "Bone Morphogenetic Protein-2 Converts the Differentiation Pathway of C2C12 Myoblasts into the Osteoblast Lineage," 1994, J Cell Biol 127:1755-1766.	
	CS1	WOZNEY ET AL., "Bone Morphogenetic Proteins: From Basic Studies to Clinical Approaches," 1998, Bone 22:591-603.	
	CT1	BLAU ET AL., "Molecular Medicine Muscle-Mediated Gene Therapy," 1995, N Engl J Med 333:1554-1556.	
	CU1	YURCHENCO ET AL., "Assembly of Basement Membranes," 1990, Ann N Y Acad Sci 580:195-213.	
	CV1	PRUCHNIC ET AL., "The Use of Adeno-Associated Virus to Circumvent the Maturation-Dependent Viral Transduction of Muscle Fibers," 2000, Hum Gene Ther 11:521-536.	
	CW1	NALBANTOGLU ET AL., "Expression of the Primary Coxsackie and Adenovirus Receptor Is Downregulated during Skeletal Muscle Maturation and Limits the Efficacy of Adenovirus-Mediated Gene Delivery to Muscle Cells," 1999, Hum Gene Ther 10: 1009-1019.	
	CX1	SNYDER ET AL., "Efficient and Stable Adeno-Associated Virus-Mediated Transduction in the Skeletal Muscle of Adult Immunocompetent Mice," 1997, Hum Gene Ther 8:1891-1900.	
	CY1	REDDI ET AL., "Cell Biology and Biochemistry of Endochondral Bone Development," 1981, Cell Relat Res 1:209-226.	
	CZ1	LEE ET AL., "Clonal Isolation of Muscle-derived Cells Capable of Enhancing Muscle Regeneration and Bone Healing," 2000, J Cell Biol 150:1085-1099.	
	CA2	APPARAILLY ET AL., "Tetracycline-Inducible Interleukin-10 Gene Transfer Mediated by an Adeno-Associate Virus: Application to Experimental Arthritis," 2002, Hum Gene Ther 13:1179-1188.	
	CB2	YAKOBSON ET AL., "Replication of Adeno-Associated Virus in Cells Irradiated with UV Light at 254 nm," 1989, J. Virol. 63:1023-1030.	
	CC2	YAKOBSON ET AL., "Replication of Adeno-Associated Virus in Synchronized Cells without the Addition of a Helper Virus," 1987, J. Virol. 61:972-981.	
	CD2	FERRARI ET AL., "Second-Strand Synthesis Is a Rate-Limiting Step for Efficient Transduction by Recombinant Adeno-Associated Virus Vectors," 1996, J. Virol. 70:3227-3234.	
	CE2	FISHER ET AL., "Transduction with Recombinant Adeno-Associated Virus for Gene Therapy Is Limited by Leading-Strand Synthesis," 1996, J. Virol. 70:520-532.	
CMK	CF2	OKUBO ET AL., "Osteoinduction by Bone Morphogenetic Protein-2 via Adenoviral Vector under Transient Immunosuppression," 2000, Biochem. Biophys. Res. Commun. 267:382-387.	

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RAK	CA	XU, RA ET AL., 2001, "Peracel transduction of neuroendocrine cells and hepatocyte with an AAV insulin vector leading to Euglycemia in diabetic rats, Molecular Therapy, Vol. 3, No. 5, May 2001, Part 2 of 2, pages S180 - S181	

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